

RECEIVED

Page 1 of 8

MAY 16 2002

1638

TECH CENTER 1600/2900



1600

#13

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/435,054A

DATE: 05/07/2002

TIME: 14:27:34

Input Set : A:\0943SEQLIST.TXT

Output Set: N:\CRF3\05072002\I435054A.raw

p.6

ENTERED

```

4 <110> APPLICANT: Lowe, Keith S.
5   Gordon-Kamm, William J.
6   Klein, Theodore M.
7   Rasco-Gaunt, Sonriza
8   Cahoon, Rebecca E.
9   Sun, Xifan
10  Hoester, George J.
11  Gregory, Carolyn A.
12  Nadimpalli, Ramgopal
14 <120> TITLE OF INVENTION: Transcriptional Activator Nucleic Acids,
15   Polypeptides, and Methods of Use Thereof
18 <130> FILE REFERENCE: 0943
20 <140> CURRENT APPLICATION NUMBER: 09/435,054A
21 <141> CURRENT FILING DATE: 1999-11-08
23 <150> PRIOR APPLICATION NUMBER: 60/107,643
24 <151> PRIOR FILING DATE: 1998-11-09
26 <160> NUMBER OF SEQ ID NOS: 26
28 <170> SOFTWARE: FastSEQ for Windows Version 3.0
30 <210> SEQ ID NO: 1
31 <211> LENGTH: 1173
32 <212> TYPE: DNA
33 <213> ORGANISM: Zea mays
35 <220> FEATURE:
36 <221> NAME/KEY: CDS
37 <222> LOCATION: (69)...(902)
39 <400> SEQUENCE: 1
40 ccacgcgtcc gccaccacac cagcagcgcg cgataaccct agctagcttc aggtagtagc   60
41 gagagcca atg gac tcc agc agc ttc ctc cct gcc gcc ggc gcg gag aat   110
42   Met Asp Ser Ser Ser Phe Leu Pro Ala Ala Gly Ala Glu Asn
43       1               5               10
45 ggc tcg gcg gcg ggc ggc gcc aac aat ggc ggc gct gct cag cag cat   158
46 Gly Ser Ala Ala Gly Gly Ala Asn Asn Gly Gly Ala Ala Gln Gln His
47   15               20               25               30
49 gcg gcg ccg gcg atc cgc gag cag gac cgg ctg atg ccg atc gcg aac   206
50 Ala Ala Pro Ala Ile Arg Glu Gln Asp Arg Leu Met Pro Ile Ala Asn
51       35               40               45
53 gtg atc cgc atc atg cgg cgc gtg ctg ccg gcg cac gcc aag atc tcg   254
54 Val Ile Arg Ile Met Arg Arg Val Leu Pro Ala His Ala Lys Ile Ser
55       50               55               60
57 gac gac gcc aag gag acg atc cag gag tgc gtg tcg gag tac atc agc   302
58 Asp Asp Ala Lys Glu Thr Ile Gln Glu Cys Val Ser Glu Tyr Ile Ser
59       65               70               75
61 ttc atc acg ggg gag gcc aac gag cgg tgc cag cgg gag cag cgc aag   350

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/435,054A

DATE: 05/07/2002

TIME: 14:27:34

Input Set : A:\0943SEQLIST.TXT

Output Set: N:\CRF3\05072002\I435054A.raw

```

62 Phe Ile Thr Gly Glu Ala Asn Glu Arg Cys Gln Arg Glu Gln Arg Lys
63      80      85      90
65 acc atc acc gcc gag gac gtg ctg tgg gcc atg agc cgc ctc ggc ttc      398
66 Thr Ile Thr Ala Glu Asp Val Leu Trp Ala Met Ser Arg Leu Gly Phe
67 95      100      105      110
69 gac gac tac gtc gag ccg ctc ggc gcc tac ctc cac cgc tac cgc gag      446
70 Asp Asp Tyr Val Glu Pro Leu Gly Ala Tyr Leu His Arg Tyr Arg Glu
71      115      120      125
73 ttc gag ggc gac gcg cgc ggc gtc ggg ctc gtc ccg ggg gcc gcc cca      494
74 Phe Glu Gly Asp Ala Arg Gly Val Gly Leu Val Pro Gly Ala Ala Pro
75      130      135      140
77 tcg cgc ggc ggc gac cac cac ccg cac tcc atg tcg cca gcg gcg atg      542
78 Ser Arg Gly Gly Asp His His Pro His Ser Met Ser Pro Ala Ala Met
79      145      150      155
81 ctc aag tcc cgc ggg cca gtc tcc gga gcc gcc atg cta ccg cac cac      590
82 Leu Lys Ser Arg Gly Pro Val Ser Gly Ala Ala Met Leu Pro His His
83      160      165      170
85 cac cac cac cac gac atg cag atg cac gcc gcc atg tac ggg gga acg      638
86 His His His His Asp Met Gln Met His Ala Ala Met Tyr Gly Gly Thr
87      175      180      185      190
89 gcc gtg ccc ccg ccg gcc ggg cct cct cac cac ggc ggg ttc ctc atg      686
90 Ala Val Pro Pro Pro Ala Gly Pro Pro His His Gly Gly Phe Leu Met
91      195      200      205
93 cca cac cca cag ggt agt agc cac tac ctg cct tac gcg tac gag ccc      734
94 Pro His Pro Gln Gly Ser Ser His Tyr Leu Pro Tyr Ala Tyr Glu Pro
95      210      215      220
97 acg tac ggc ggt gag cac gcc atg gct gca tac tat gga ggc gcc gcg      782
98 Thr Tyr Gly Gly Glu His Ala Met Ala Ala Tyr Tyr Gly Gly Ala Ala
99      225      230      235
101 tac gcg ccc gcc aac ggc ggg agc ggc gac ggc agt ggc agt ggc ggc      830
102 Tyr Ala Pro Gly Asn Gly Gly Ser Gly Asp Gly Ser Gly Ser Gly Gly
103      240      245      250
105 ggt ggc ggg agc gcg tcg cac aca ccg cag ggc agc ggc ggc ttg gag      878
106 Gly Gly Gly Ser Ala Ser His Thr Pro Gln Gly Ser Gly Gly Leu Glu
107      255      260      265      270
109 cac ccg cac ccg ttc gcg tac aag tagctagtgc gtacgtcggt cgacttgagc      932
110 His Pro His Pro Phe Ala Tyr Lys
111      275
113 aagccatcga tctgtgatc tgaacgtacg ctgtattgta cacgcatgca cgtacgtatc      992
114 ggcggctagc tctcctgttt aagttgtact gtgattctgt cccggccggc tagcaactta      1052
115 gtatcttctc tcagttctcta gtttcttagc agtcgtagaa gtgttcaatg cttgccagtg      1112
116 tgttgtttta gggccggggg aaaccatccg atgagattat ttcaaaaaaa aaaaaaaaaa      1172
117 a      1173
119 <210> SEQ ID NO: 2
120 <211> LENGTH: 278
121 <212> TYPE: PRT
122 <213> ORGANISM: Zea mays
124 <400> SEQUENCE: 2
125 Met Asp Ser Ser Ser Phe Leu Pro Ala Ala Gly Ala Glu Asn Gly Ser

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/435,054A

DATE: 05/07/2002

TIME: 14:27:34

Input Set : A:\0943SEQLIST.TXT

Output Set: N:\CRF3\05072002\I435054A.raw

```

126   1           5           10           15
127 Ala Ala Gly Gly Ala Asn Asn Gly Gly Ala Ala Gln Gln His Ala Ala
128           20           25           30
129 Pro Ala Ile Arg Glu Gln Asp Arg Leu Met Pro Ile Ala Asn Val Ile
130           35           40           45
131 Arg Ile Met Arg Arg Val Leu Pro Ala His Ala Lys Ile Ser Asp Asp
132           50           55           60
133 Ala Lys Glu Thr Ile Gln Glu Cys Val Ser Glu Tyr Ile Ser Phe Ile
134           65           70           75           80
135 Thr Gly Glu Ala Asn Glu Arg Cys Gln Arg Glu Gln Arg Lys Thr Ile
136           85           90           95
137 Thr Ala Glu Asp Val Leu Trp Ala Met Ser Arg Leu Gly Phe Asp Asp
138           100          105          110
139 Tyr Val Glu Pro Leu Gly Ala Tyr Leu His Arg Tyr Arg Glu Phe Glu
140           115          120          125
141 Gly Asp Ala Arg Gly Val Gly Leu Val Pro Gly Ala Ala Pro Ser Arg
142           130          135          140
143 Gly Gly Asp His His Pro His Ser Met Ser Pro Ala Ala Met Leu Lys
144           145          150          155          160
145 Ser Arg Gly Pro Val Ser Gly Ala Ala Met Leu Pro His His His His
146           165          170          175
147 His His Asp Met Gln Met His Ala Ala Met Tyr Gly Gly Thr Ala Val
148           180          185          190
149 Pro Pro Pro Ala Gly Pro Pro His His Gly Gly Phe Leu Met Pro His
150           195          200          205
151 Pro Gln Gly Ser Ser His Tyr Leu Pro Tyr Ala Tyr Glu Pro Thr Tyr
152           210          215          220
153 Gly Gly Glu His Ala Met Ala Ala Tyr Tyr Gly Gly Ala Ala Tyr Ala
154           225          230          235          240
155 Pro Gly Asn Gly Gly Ser Gly Asp Gly Ser Gly Ser Gly Gly Gly Gly
156           245          250          255
157 Gly Ser Ala Ser His Thr Pro Gln Gly Ser Gly Gly Leu Glu His Pro
158           260          265          270
159 His Pro Phe Ala Tyr Lys
160           275
162 <210> SEQ ID NO: 3
163 <211> LENGTH: 20
164 <212> TYPE: DNA
165 <213> ORGANISM: Artificial Sequence
167 <220> FEATURE:
168 <223> OTHER INFORMATION: primer
170 <400> SEQUENCE: 3
171 tagtagcgag agccaatgga
173 <210> SEQ ID NO: 4
174 <211> LENGTH: 20
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
178 <220> FEATURE:
179 <223> OTHER INFORMATION: primer

```

20

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/435,054A

DATE: 05/07/2002

TIME: 14:27:34

Input Set : A:\0943SEQLIST.TXT

Output Set: N:\CRF3\05072002\I435054A.raw

```

181 <400> SEQUENCE: 4
182 gccgggacag aatcacagta
184 <210> SEQ ID NO: 5
185 <211> LENGTH: 20
186 <212> TYPE: DNA
187 <213> ORGANISM: Artificial Sequence
189 <220> FEATURE:
190 <223> OTHER INFORMATION: primer
192 <400> SEQUENCE: 5
193 tagtagcgag agccaatgga
195 <210> SEQ ID NO: 6
196 <211> LENGTH: 20
197 <212> TYPE: DNA
198 <213> ORGANISM: Artificial Sequence
200 <220> FEATURE:
201 <223> OTHER INFORMATION: primer
203 <400> SEQUENCE: 6
204 cccggcccta aaacaacaca
206 <210> SEQ ID NO: 7
207 <211> LENGTH: 481
208 <212> TYPE: DNA
209 <213> ORGANISM: Argemone mexicana
211 <220> FEATURE:
212 <221> NAME/KEY: CDS
213 <222> LOCATION: (44)...(481)
215 <221> NAME/KEY: misc_feature
216 <222> LOCATION: (1)...(481)
217 <223> OTHER INFORMATION: n = A,T,C or G
W--> 219 <400> 7
220 cgagagaaag agttggtgaa gaagaagaag aagttgaaaa gag atg gaa cgt ggt
221 Met Glu Arg Gly
222 1
224 ggt ggt ggt ggt ggt agt ggt ggt ggt ttc cat gga tat cag aaa ctc
225 Gly Gly Gly Gly Gly Ser Gly Gly Gly Phe His Gly Tyr Gln Lys Leu
226 5 10 15 20
228 cca aaa tca aac tcc gct gga atg atg ctc tcg gag cta tcg aat aac
229 Pro Lys Ser Asn Ser Ala Gly Met Met Leu Ser Glu Leu Ser Asn Asn
230 25 30 35
232 aac aac aat att gac gta aac tct aca tgt act gta cga gag caa gat
233 Asn Asn Asn Ile Asp Val Asn Ser Thr Cys Thr Val Arg Glu Gln Asp
234 40 45 50
236 cga tac atg cca att gct aat gtg atc agg atc atg cgt aag gta ctt
237 Arg Tyr Met Pro Ile Ala Asn Val Ile Arg Ile Met Arg Lys Val Leu
238 55 60 65
240 cct act cat gcc aag atc tct gac gat gcc aaa gaa act atc caa gaa
241 Pro Thr His Ala Lys Ile Ser Asp Asp Ala Lys Glu Thr Ile Gln Glu
242 70 75 80
244 tgt gtc tca gaa tac atc agt ttc atc aca agt gaa gcc aat gat cgt
245 Cys Val Ser Glu Tyr Ile Ser Phe Ile Thr Ser Glu Ala Asn Asp Arg

```

RAW SEQUENCE LISTING

DATE: 05/07/2002

PATENT APPLICATION: US/09/435,054A

TIME: 14:27:35

Input Set : A:\0943SEQLIST.TXT

Output Set: N:\CRF3\05072002\I435054A.raw

```

246      85              90              95              100
248 tgc caa cgt gaa caa aga aag aca atc aca gct gaa gat gtt tta tgg      391
249 Cys Gln Arg Glu Gln Arg Lys Thr Ile Thr Ala Glu Asp Val Leu Trp
250              105              110              115
W--> 252 gcg atg agc aaa cta ggg ntt gat gag tac att gaa cct cta act ctt      439
W--> 253 Ala Met Ser Lys Leu Gly Xaa Asp Glu Tyr Ile Glu Pro Leu Thr Leu
254              120              125              130
W--> 256 tac ctt caa cgt tat cgt gag ttt gaa ggt gna cgt tgg tca      481
W--> 257 Tyr Leu Gln Arg Tyr Arg Glu Phe Glu Gly Xaa Arg Trp Ser
258              135              140              145
261 <210> SEQ ID NO: 8
262 <211> LENGTH: 146
263 <212> TYPE: PRT
264 <213> ORGANISM: Argemone mexicana
266 <220> FEATURE:
267 <221> NAME/KEY: VARIANT
268 <222> LOCATION: (1)...(146)
269 <223> OTHER INFORMATION: Xaa = Any Amino Acid
271 <400> SEQUENCE: 8
272 Met Glu Arg Gly Gly Gly Gly Gly Ser Gly Gly Gly Phe His Gly
273 1 5 10 15
274 Tyr Gln Lys Leu Pro Lys Ser Asn Ser Ala Gly Met Met Leu Ser Glu
275 20 25 30
276 Leu Ser Asn Asn Asn Asn Asn Ile Asp Val Asn Ser Thr Cys Thr Val
277 35 40 45
278 Arg Glu Gln Asp Arg Tyr Met Pro Ile Ala Asn Val Ile Arg Ile Met
279 50 55 60
280 Arg Lys Val Leu Pro Thr His Ala Lys Ile Ser Asp Asp Ala Lys Glu
281 65 70 75 80
282 Thr Ile Gln Glu Cys Val Ser Glu Tyr Ile Ser Phe Ile Thr Ser Glu
283 85 90 95
284 Ala Asn Asp Arg Cys Gln Arg Glu Gln Arg Lys Thr Ile Thr Ala Glu
285 100 105 110
W--> 286 Asp Val Leu Trp Ala Met Ser Lys Leu Gly Xaa Asp Glu Tyr Ile Glu
287 115 120 125
W--> 288 Pro Leu Thr Leu Tyr Leu Gln Arg Tyr Arg Glu Phe Glu Gly Xaa Arg
289 130 135 140
290 Trp Ser
291 145
293 <210> SEQ ID NO: 9
294 <211> LENGTH: 942
295 <212> TYPE: DNA
296 <213> ORGANISM: Glycine max
298 <220> FEATURE:
299 <221> NAME/KEY: CDS
300 <222> LOCATION: (3)...(722)
302 <400> SEQUENCE: 9
303 gc acg agc tct ctt ata atc aca cac aca cct acc tta ata gct atg
304 Thr Ser Ser Leu Ile Ile Thr His Thr Pro Thr Leu Ile Ala Met

```

47

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/435,054A

DATE: 05/07/2002
TIME: 14:27:36

Input Set : A:\0943SEQLIST.TXT
Output Set: N:\CRF3\05072002\I435054A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:7; N Pos. 410,471

Seq#:7; Xaa Pos. 123,143

Seq#:8; Xaa Pos. 123,143

Seq#:15; N Pos. 236,242,257,276,420,457,463,470,486,508,540,554,580,586,596

Seq#:15; Xaa Pos. 78,80,85,92,140,152,154,156,162,169,180,184,193,195,198

Seq#:16; Xaa Pos. 78,80,85,92,140,152,154,156,162,169,180,184,193,195,198

Seq#:23; Xaa Pos. 5,6,18,19,22,33,45,47,51,54,55,56,57,61,62,63,65